

Instructions for UVR Time Delay Device used with Type SPB, Systems Pow-R Breakers



I.L. 15141-A

UL Listed Device

The undervoltage release time delay device is listed by Underwriters' Laboratories, Inc. as a circuit breaker accessory under File E64983.

General Description/Purpose[©]

An undervoltage release (UVR) time delay device is an externally mounted accessory that is used in conjunction with an internally mounted, instantaneous undervoltage release – which must be ordered separately – to provide time delayed operations. Cat. No. SPBUV060DT is required for 250A thru 3000A frames; Cat. No. SPBUV060DT4 is required for 4000A frame. When used with Type SPB, Systems Pow-R Breaker, the time delayed UVR operation will avoid nuisance breaker opening operations resulting from momentary dips in the monitored AC voltage source.

The device is suitable for monitoring 50/60 HZ, 120 volt sources only. Where sources greater than 120 volts are to be monitored, a step-down transformer must be used to insure 120 volts maximum on the time delay device.

Available Types

The time delay device is available in a surface mounted enclosure in two styles: with and without an internally mounted memory relay. The standard device, shown in Fig. 1, is supplied without the memory relay as Cat. SPBTDDS. The alternate device, shown in Fig. 2 is supplied with the memory relay as Cat. SPBTDIS.

Each type device is equipped with a three-point selector switch to provide time delay adjustments at 0.1, 0.3, and 0.5 seconds. The operating tolerance at each setting is $\pm 50\%$.

A light emitting diode (LED) is furnished in each type device that indicates when the instantaneous undervoltage release mounted in the type SPB Breaker is energized. Note, the breaker is held in the "Trip Free" position and may not be closed until the UVR is energized; however, the breaker may be open or closed with the UVR energized.

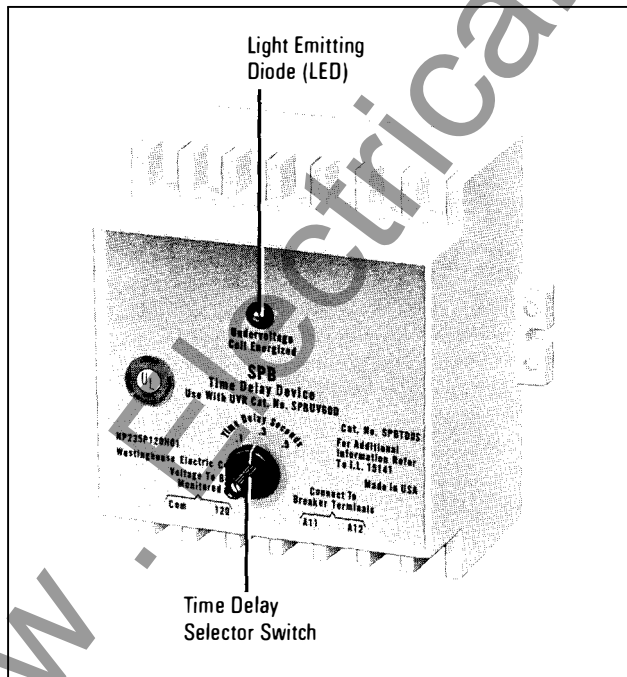


Fig. 1 SPB Time Delay Device for Surface Mounting (Catalog No. SPBTDDS)

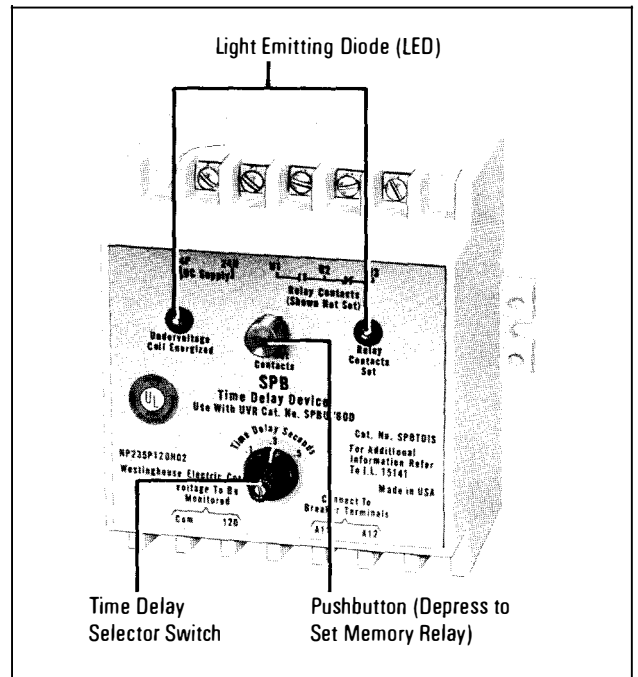


Fig. 2 SPB Time Delay Device with Memory Relay for Surface Mounting (Catalog No. SPBTDIS)

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The memory relay, supplied with Cat. SPDTDIS time delay device, is a 24 volt DC relay with one set of S.P.D.T. contacts available for remote signal purposes. It is ideally suited for application with emergency/standby generator installations where 24 volt engine starting batteries are normally available and where it is desirable to have an indication for a UVR Breaker opening operation.

Remote lamps may be used to indicate: (1) That the relay is in the picked-up or "set" position with DC Control power available and (2) the loss of voltage on the monitored AC source. The relay contacts and coil are rated as indicated in Table 1. The memory relay is picked-up or "set" by depressing the pushbutton provided. The relay must be manually reset following each loss of the AC monitored voltage source.

Table 1 – Memory Relay	
Contact Amps	Rating Volts
2.0	28 DC Max.
2.0	120 AC
Coil Burden	
1.0 Va Max. @ 24 V DC	

Electrical Data

The undervoltage release device, when used in conjunction with a time delay device on 120 volts, 50/60 HZ, will pick-up at 85% of rated voltage (102 volts) and will drop out at 35-70% of rated voltage (42 to 84 volts).

The maximum burden of the time delay device – including the associated undervoltage release device assembled in the SPB Breaker – is 5.0 VA maximum @ 120 volts, 50/60 HZ.

Connection Diagrams

A block diagram is provided in Fig. 3 to illustrate the internal details in functional form as well as the external connections. Fig. 4 illustrates the external connections required with time delay device, Cat. SPBTDDS. Fig. 5 illustrates similar connections used with Cat. SPBTDIS.

The terminals on the time delay device are suitable for No. 14 or No. 12 AWG Copper conductors.

For user convenience, Type SPB Breaker control wire termination locations are illustrated in Fig. 6. For field

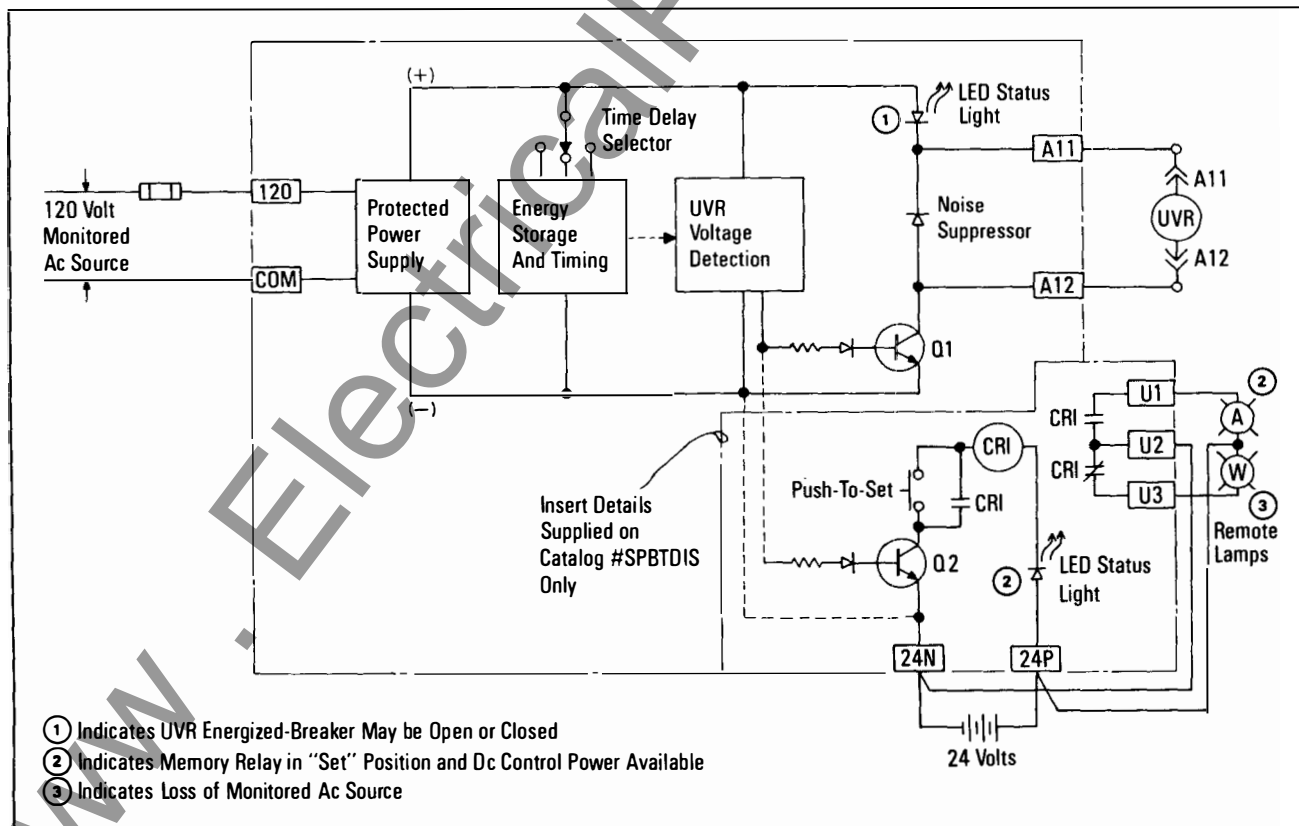


Fig. 3 Block Diagram for Time Delay UVR Device

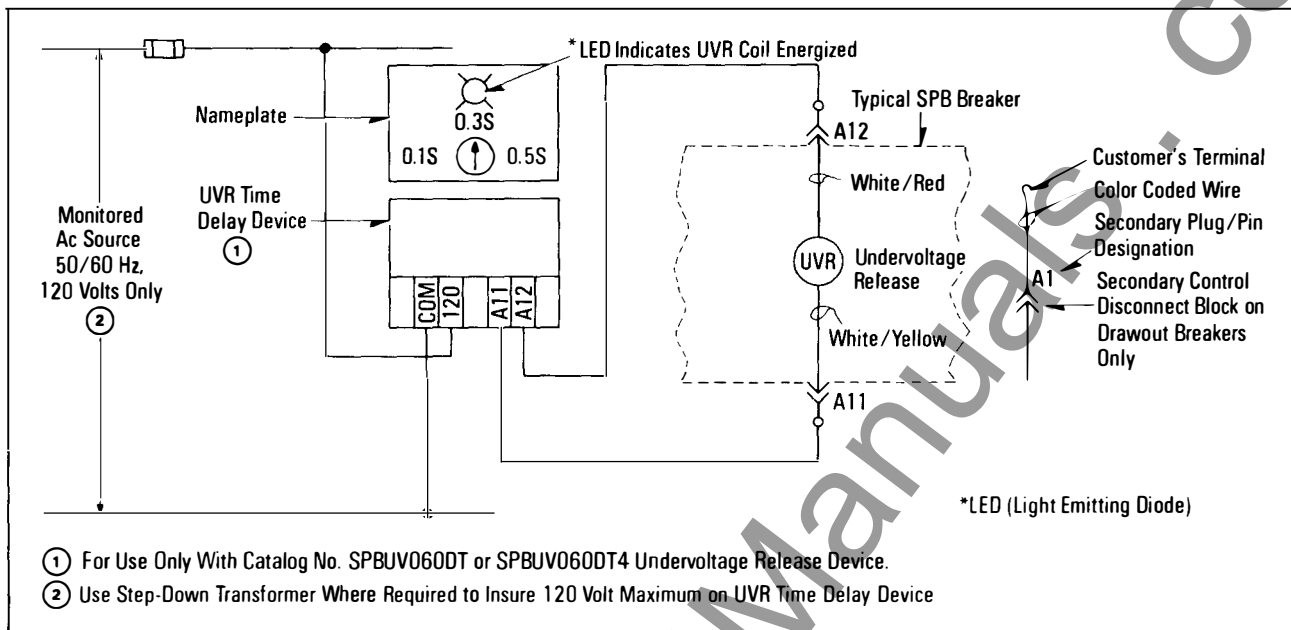


Fig. 4 UVR Time Delay Device Connection Diagram for Use with Catalog No. SPBTDDS Device

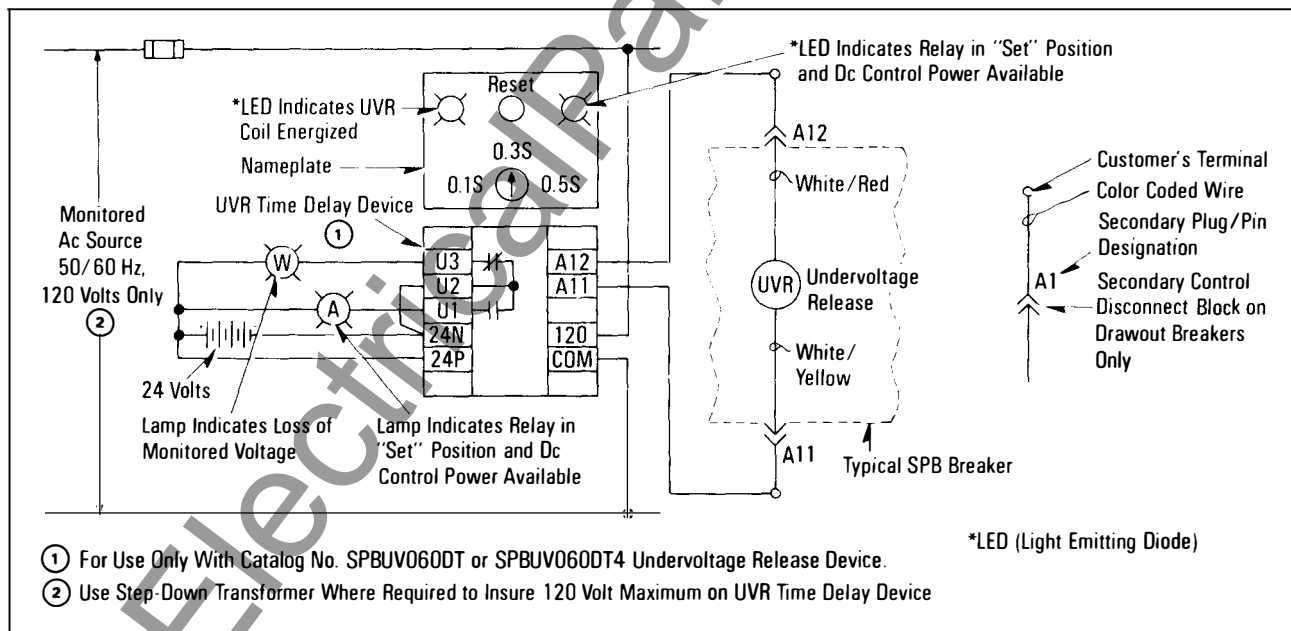


Fig. 5 UVR Time Delay with Memory Contact Connection (Requires 24 Volts DC Control Voltage) for Use with Catalog No. SPBTDIS Device

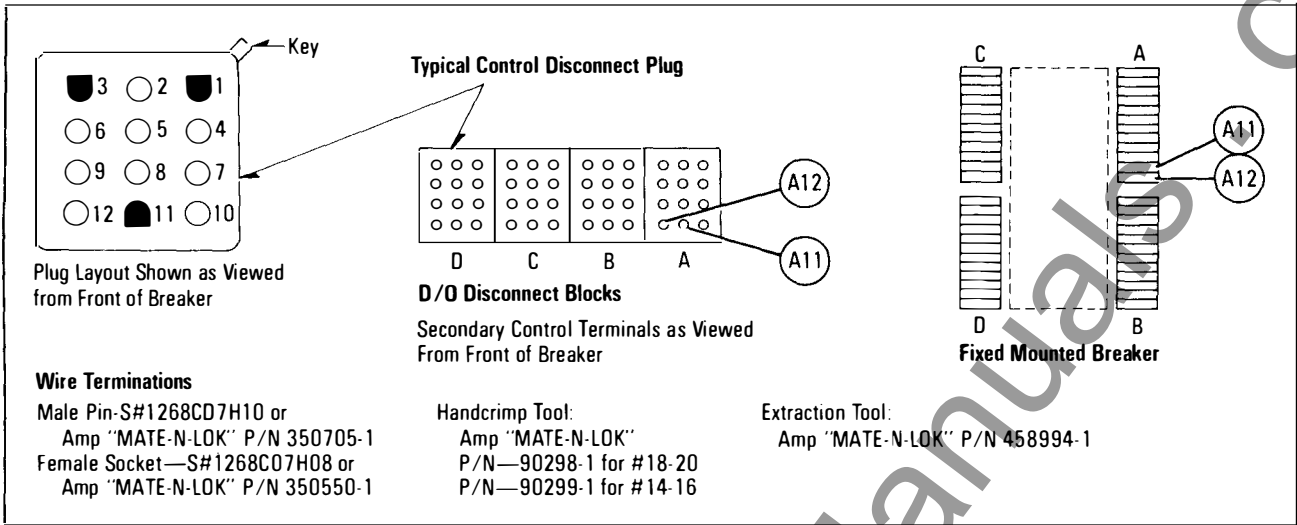


Fig. 6 UVR/SPB Control Wire Termination Locations

modifications, control wire termination hardware details and wiring tools are also identified.

Mounting Arrangements

The UVR Time delay device is supplied as standard in a surface mounted enclosure with outline and mounting dimensions as shown in Fig. 7. For installations requiring a semi-flush cover mounting, Style No. 1264C67G01 adapter may be used — must be ordered separately. Panel cutout and mounting dimensions for the semi-flush cover mounting are illustrated in Fig. 8.

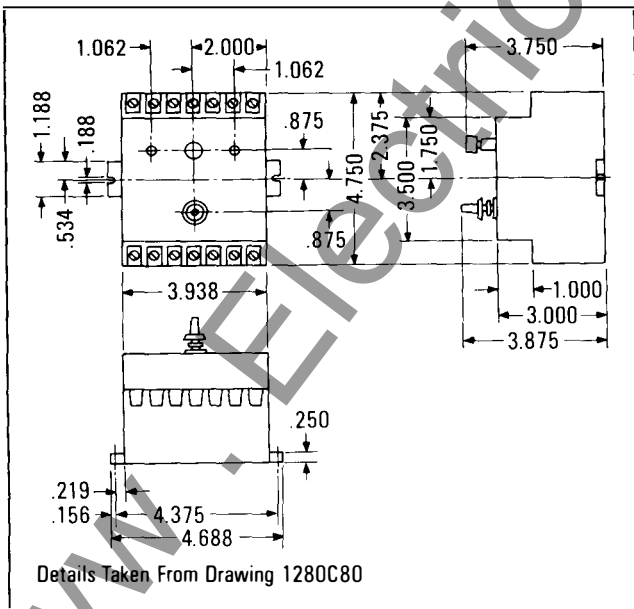


Fig. 7 Outline of Time Delay UVR Device for Surface Mounting

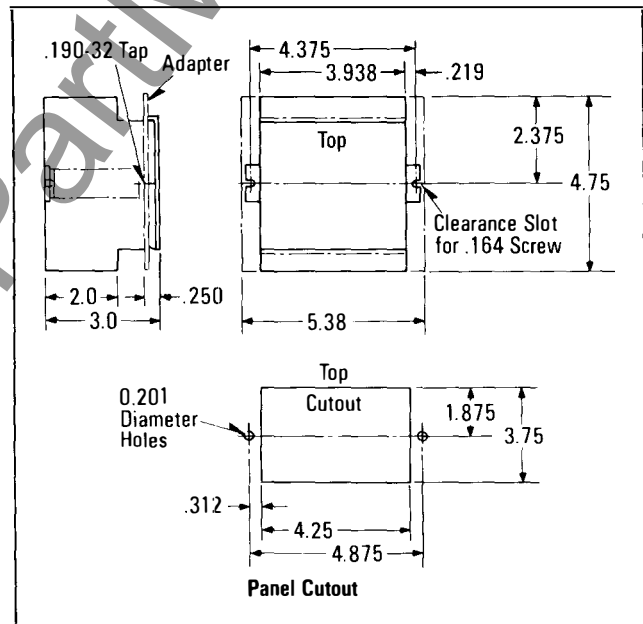


Fig. 8 Semi-Flush Cover Mounting Details

Additional Information

For operational information relative to the Type SPB, Systems Pow-R Breaker, refer to I.B. 15082. For field installation information on UVR accessory, refer to I.L. 15162.

WARNING: THERE IS A HAZARD OF ELECTRICAL SHOCK OR BURN WHENEVER WORKING IN OR AROUND ELECTRICAL EQUIPMENT. ALWAYS TURN OFF POWER SUPPLYING THIS EQUIPMENT BEFORE WORKING INSIDE SWITCHBOARDS.